

SONY®

White paper

November 2012



XPERIA ion
LT28i

Purpose of this document

Sony product White papers are intended to give an overview of a product and provide details in relevant areas of technology.

Document history

| Version | | |
|---------------|-------------------------|-----------|
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Sony Mobile Developer World

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Table of contents

| | |
|--|----------|
| Product overview | 2 |
| Sony Xperia™ ion – Experience Intense Power | 2 |
| Signature features | 4 |
| Facts – dimensions, weight, performance and networks | 5 |
| Categorised feature list | 7 |
| Technologies in detail | 9 |
| Device-to-device communications (local) | 9 |
| Bluetooth™ wireless technology | 9 |
| Wi-Fi® | 10 |
| DLNA Certified® (Digital Living Network Alliance) | 11 |
| Messaging | 12 |
| MMS (Multimedia Messaging Service)..... | 12 |
| Email | 12 |
| Positioning – location based services | 13 |
| Provisioning (OMA CP) | 13 |
| Multimedia (audio, image and video) | 14 |
| Synchronisation (OMA DS, EAS, Google Sync™) | 15 |
| Web browser | 16 |
| Trademarks and acknowledgements | 17 |

Product overview

Sony Xperia™ ion – Experience Intense Power

There's fast, and then there's *fast*. So why wait? Browse the web and download apps at incredible speeds. Shoot HD videos, take pictures in a snap, and share them all on the stunning 4.55" HD screen. In just a few clicks, enter a wider world of movies, music, and games. With the Sony Entertainment Network*, boredom is never an option.

Get what you want...fast

Get what you want without the wait. Browse the web, stream music, watch videos. Download your favorite games and apps. All in an instant. On LTE network and a 1.5 GHz dual processor, the Xperia™ ion keeps you connected. Always. And fast.

See every detail

Experience videos, photos and your favorite TV shows in vivid, bright colors on the stunning 4.55" HD Reality Display with Mobile BRAVIA® Engine. Crisp images. No jagged edges. With reduced light reflection, the picture stays clear when you're outdoors too. Merely the best entertainment experience in HD.

Snap your shots in an instant

Some events are too good to miss. Now you don't have to. Activate your 12 MP camera and take your first shot in just over a second. Keep shooting with only one second between shots. No delays. No missed moments. Even in low light conditions, the Exmor R™ for mobile camera sensor lightens up any gloomy day.

Show it like it is

Vacation videos, baby's first steps...record it all in brilliant HD video with one touch of a button. Connect your Xperia™ ion to an HD TV and relive those moments from the comfort of your couch. Want to share moments together? Chat away on the front-facing HD chat-cam. Perfect for video calls.

**Sony Entertainment Network with Video Unlimited™ and Music Unlimited™ are not available in all markets.*

Sony Entertainment Network*. Your ultimate source for digital entertainment

Hot tracks, latest films. Enjoy millions of songs and thousands of movies. It's all on Sony Entertainment Network services - Music Unlimited™ and Videos Unlimited™, exclusive to Xperia™ smartphones. No trips to the store. No lines. No late fees. Just pure entertainment.

Enjoy everything with one account. It's the perfect fit for a life full of entertainment.

**Sony Entertainment Network with Video Unlimited™ and Music Unlimited™ are not available in all markets.*



Signature features

The Sony Xperia™ ion comes with a range of features as standard. Below is a summary of the key signature features.

Xperia™ Timescape™

Communication made easy

The Timescape™ application manages all your communication with one person in one place. You can effortlessly browse by category your Facebook™, Twitter™, email and text communications, as well as view your photos. Now everything is all together and in chronological order, so you don't have to open different applications to see what's going on.

Xperia™ Infinite button

Everything you want – from everywhere

Tap the infinite button in the Timescape™ application and smart filter each category of communication by person. For example, when viewing a text message from a friend in Timescape™, tap the infinite button to view a list of all chat messages with that friend.

Xperia™ Local connectivity

More control over your media

Using Xperia™ Local connectivity, you can exercise more control over how media files get transferred and stored. For example, you can select MTP mode to transfer files if you want to limit the risk of data corruption or select MSC mode if you want to have more control over the data storage.

Xperia™ Home screen application

The place you call Home

Customise your Home screen with widgets, shortcuts, folders, themes, wallpaper and other items. Where's best for you? Email top right? Music player bottom left? You decide. With four extensions to your Home screen, you've got plenty of space to put things where you want. Just remember to flick left or right to find them.

Facts – dimensions, weight, performance and networks

| | |
|--------------------------|--|
| Operating system | Google™ Android™ 2.3 (Gingerbread) |
| Processor | 1.5 GHz Qualcomm APQ8060 Dual Core |
| GPU | Adreno 220 |
| Size | 133 x 68 x 10.8 mm |
| Weight | 144 grams |
| Available colours | Black |
| SIM card | Micro SIM |
| Main screen | |
| Colours | 16,000,000 colour TFT |
| Resolution | 1280x720 pixels |
| Size (diagonal) | 4.55 inches |
| Scratch-resistant | Shatter-proof sheet on scratch-resistant glass |
| Input mechanisms | |
| Text input | On-screen QWERTY keyboard |
| Touch screen | Capacitive |
| Touch gesture | Yes – multi-touch, up to 4 fingers supported |
| Memory | |
| Internal phone storage | 2 GB (up to 1.8 GB user-accessible memory) |
| RAM | 1 GB |
| Flash memory | 16 GB eMMC |
| Expansion slot | microSD™ card, up to 32 GB |
| Camera | |
| Camera resolution | 12 MP |
| Digital zoom | 16x |
| Photo light | Yes |
| Video recording | Yes – HD 1080p |
| Front Camera | Yes – HD 720p for video chat and 1.3 MP for camera capture |
| Sensors | |
| Accelerometer | Yes |
| Proximity sensor | Yes |





| | |
|-----------------------------|---|
| Ambient light sensor | Yes |
| Magnetometer | Yes |
| Gyroscope | Yes |
| Networks | |
| LT28i | UMTS HSPA+ 850 (Band V), 1700 (Band IV), 1900 (Band II), 2100 (Band I) GSM EDGE 850, 900, 1800, 1900 LTE Band IV and Band XVII |
| Data transfer speeds | |
| GSM EDGE | Up to 237 kbps |
| UMTS HSPA cat 6 (upload) | Up to 5.8 Mbps |
| UMTS HSPA cat 14(download) | Up to 21.1 Mbps |
| LTE cat3 | Up to 50 Mbps (upload), up to 100 Mbps (download) |
| Talk time (GSM) | Up to 10 hours* |
| Standby time (GSM) | Up to 400 hours* |
| Talk time (UMTS) | Up to 4 hours* |
| Standby time (UMTS) | Up to 350 hours* |
| Standby time (LTE) | Up to 300 hours* |
| Music listening time | Up to 12 hours* |
| Video playback time | Up to 3 hours* |
| Embedded Battery | 1900 mAh typical 1840 mAh minimum |




* Values are according to GSM Association Battery Life Measurement Technique as performed in controlled laboratory conditions. Actual time may vary.

NOTE: Battery performance may vary depending on network conditions and configurations, and phone usage.

NOTE: All performance metrics are measured under laboratory conditions.

Categorised feature list

| | | |
|--|--|--|
|  <p>Camera 3D Sweep Panorama 12 megapixel camera 16x digital zoom Auto focus Face detection Flash/Photo light Front-facing camera (HD 720p) Geotagging HD video recording (1080p) Image stabiliser Red-eye reduction Self-timer Scene recognition Send to web Smile detection Sony Exmor R™ for mobile image sensor Sweep Panorama Sweep Multi Angle Touch capture Touch focus Video light Video recording</p> |  <p>Music Album art Bluetooth™ stereo (A2DP) Music Player TrackID™ music recognition xLoud™ Experience</p> |  <p>Internet Bookmarks Google Play™ Google™ search* Google Voice™ Search* Google Maps™ for Mobile with Navigation, Places and Latitude™* Pan & zoom Web browser (WebKit™)</p> |
|  <p>Communication Call list Facebook™ application* Google Talk™ application* Noise suppression Xperia™ Timescape™ Xperia™ with Facebook™ Speakerphone Twitter™ (Timescape™ integration)*</p> |  <p>Messaging Conversations Email Google Mail™* Messaging Multimedia messaging (MMS) Predictive text input Sound recorder Text messaging (SMS)</p> |  <p>Design Auto rotation Gesture input Gyroscope HD Reality Display with Sony Mobile BRAVIA® Engine On-screen QWERTY keyboard Screenshot capturing Wallpaper</p> |

| | | |
|--|---|--|
|  <p>Entertainment 3D Album 3D games Accelerated Adobe Flash Video Media browser Motion gaming PlayStation® Certified Radio (FM radio with RDS) Sony Entertainment Network* TV launcher YouTube™*</p> |  <p>Organiser Airplane mode Alarm clock Calculator Calendar Contacts Document readers eCompass™ Infinite button LiveWare™ manager Notes OfficeSuite Setup guide</p> |  <p>Connectivity 3.5 mm audio jack (CTIA) aGPS* ANT+ sports fitness Bluetooth™ wireless technology DLNA Certified® GLONASS* HDMI support Media Transfer Protocol support Micro USB support Native USB tethering NFC USB High speed 2.0 support USB host Wi-Fi® Wi-Fi® Hotspot functionality</p> |
|--|---|--|

* This service is not available in all markets.

Technologies in detail

NOTE: The information outlined below is general and levels of compliance to standards and specifications may vary between products and markets. For more information, contact Sony Mobile Developer World or your Sony contact person where applicable.

Device-to-device communications (local)

Bluetooth™ wireless technology

| | |
|--|--|
| Bluetooth™ profiles supported | Advanced Audio Distribution Profile v1.2 Audio/Video Remote Control Profile v1.0 Handsfree Profile v1.5 Headset Profile v1.1 Object Push Profile v1.1 Phonebook Access Profile v1.0 |
| Core version and supported core features | Advanced Audio 2.1 + EDR |
| Connectable devices | Products supporting at least one of the profiles above. |

More information:

www.sonymobile.com/developer

www.bluetooth.com

Wi-Fi®

| | |
|---------------------|---|
| Supported standards | IEEE 802.11b/g/n and Wi-Fi® |
| Connectable devices | Wi-Fi® access points |
| Frequency band | 2.4 GHz |
| Data transfer rate | Up to 72 Mbit/s |
| Security | WEP 64 bit WEP 128 bit TKIP CCMP (AES) Open Authentication Shared Authentication EAP-SIM EAP-TLS EAP-TTLS/MSCHAPv2 PEAPv0/EAP-MSCHAPv2 PEAPv1/EAP-GTC WPA Personal and WPA2 Personal WPA Enterprise and WPA2 Enterprise |
| Encryption | WEP, TKIP and AES |
| Power save | WMM-UAPSD QoS, WMM |

DLNA Certified® (Digital Living Network Alliance)

| | |
|--------------------------|--|
| Supported Device Classes | <p>M-DMS – Mobile Digital Media Server Media Types: images Summary: The digital media server exposes the media files in your phone to a Wi-Fi® network. The files can then be accessed from other DLNA Certified® clients.</p> <p>+PU+ Media Types: image, video and music Summary: Play media in the phone on another device, such as a TV or computer using 2-box push technology. +PU+ is integrated into the Gallery and Music applications.</p> <p>M-DMP – Mobile Digital Media Player Media Types: image, video and music Summary: Play content stored on another device, for example, a server or a PC, directly on the phone.</p> |
| Supported Bearers | Wi-Fi® |
| DRM Support | The DLNA Certified® implementation does not support DRM-protected content. |

Messaging

MMS (Multimedia Messaging Service)

According to OMA Multimedia Messaging Service v1.0 + SMIL

Email

| | |
|------------------|---|
| Bearer type (IP) | GPRS, EGPRS, UMTS |
| Character sets | BIG5 Traditional Chinese GB18030 ISO-2022-JP Japanese ISO-8859-1 ISO-8859-2 Eastern Europe ISO-8859-5 Cyrillic ISO-8859-7 Greek ISO-8859-9 Turkish ISO 8859-11 KOI8-R Cyrillic Shift_JIS Japanese USASCII UTF-16 UTF-8 Windows® 874 Windows® 1251 Cyrillic Windows® 1252 Windows® 1254 Turkish Windows® 1258 Vietnamese |
| Protocols | POP3 and IMAP4 |
| Push email | Microsoft® Exchange ActiveSync® (EAS) |
| Secure email | SSL/TLS, both port methods (POPS/IMAPS) and START-TLS |
| HTML mail | Yes (read only) |

More information:

www.sonymobile.com/developer

www.openmobilealliance.org

Positioning – location based services

Supported standards:

- OMA Secure User Plane Location (SUPL) v1.0
- 3GPP™ Control Plane location (including Emergency location)
- Qualcomm® GPSOneXtra™

Supported satellite systems:

- GPS
- GLONASS*

* **NOTE:** GPS and GLONASS are used together to calculate the position. Positioning is more robust and accurate in most conditions, if both systems are active. The benefits of using GLONASS are automatically available for all applications using the Satellite Positioning API ("GPS Provider" in Android terminology).

Provisioning (OMA CP)

OMA CP version 1.1

Multimedia (audio, image and video)

| | | |
|------------------------|---|---|
| Audio Playback | Decoder format | Supported in file format |
| | Audio decoding MPEG-1/2/2.5, audio layer 3 | MP3 (.mp3), 3GPP (.3gp), MP4 (.mp4, .m4a) |
| | AAC, AAC+, eAAC+ | 3GPP (.3gp), MP4 (.mp4) |
| | AMR-NB, AMR-WB | 3GPP (.3gp) |
| | General MIDI (GM) | SMF (.mid) |
| | Linear PCM 16bit | WAV (.wav) |
| | OTA | OTA (.ota) |
| | vorbis | Ogg (.ogg) |
| Audio Recording | Encoder format | Supported in file format |
| | AMR-NB, AMR-WB | 3GPP (.3gp), MP4 (.mp4), AMR (.amr) |
| | AMR-NB, AMR-WB, AAC-LC stereo Sample rate: 48 kHz Bit rate: 128 kbps | 3GPP (.3gp), MP4 (.mp4) |
| Image Playback | Decoder format | Supported in file format |
| | 1, 4, 8, 16, 24 and 32 bpp and RLE encoded formats | BMP (.bmp) |
| | Single and multi-frame, bitmap mask support (GIF87a format and GIF89a format) | GIF (.gif) |
| | Joint Photographic Experts Group | JPEG (.jpg) |
| | Portable Network Graphics Bitmap mask support | PNG (.png) |
| | Wireless Bitmap | WBMP (.wbmp) |
| Image Capture | Encoder format | Supported in file format |
| | Joint Photographic Experts Group | JPEG (.jpg) |
| Video Playback | Decoder format | Supported in file format |
| | MPEG-4 Simple Profile Level 6, Advanced Simple Profile Level 5 | 3GPP (.3gp), MP4 (.mp4), Matroska (.mkv), AVI (.avi, .xvid), (.mov) |
| | H.264 High Profile Level 3.2 | 3GPP (.3gp), MP4 (.mp4), Matroska (.mkv) |
| | H.263 Profile 0 Level 70 | 3GPP (.3gp) |
| | VP8 | WebM (.webm) |

| Video Recording | Encoder format | Supported in file format |
|------------------------------|---|---|
| | Video H.263 Profile 0, H.264 Baseline Profile Audio: AAC-LC stereo, sample rate 48 kHz bit rate 128 kbps, AMR-NB | 3GPP (.3gp), MP4 (.mp4) |
| Audio/Video Streaming | Streaming transport | RTSP according to 3GPP™ HTTP streaming |
| DRM | DRM (Digital Rights Management) – features the rights and copy protection of downloaded content | OMA DRM 1.0 Marlin DRM |

Synchronisation (OMA DS, EAS, Google Sync™)

OMA Data Synchronisation protocol versions 1.1.2 and 1.2

OMA Data Formats: vCard 2.1, vCalendar 1.0

Microsoft® Exchange ActiveSync® protocol version 2.5

Microsoft® Exchange ActiveSync® protocol version 12

Microsoft® Exchange ActiveSync® protocol version 12.1

Google Sync™

Related information:

www.sonymobile.com/developer

Web browser

| | |
|----------------------|--|
| Browser version | Android 2.3 Browser (Based on WebKit™) |
| Navigation/rendering | Adobe™ Flash™ 11 Full page PC rendering Landscape/portrait rendering Pan & Zoom Sharing links using NFC |
| Search | Internet search |
| Browser compliancy | CSS 2.0 CSS 2.1 CSS 3.0 DOM 2.0 DOM 3.0 HTML version. 4.0 HTML version. 5.0 JavaScript 1.7/ECMA-script 262 3rd edition WebGL 1.0 XHTML Basic version 1.0 XHTML 1.1 |
| Supported Device API | Geo-location API |
| Protocol compliancy | Gzip HTTP/1.1 OMA Download 1.0 TLS 1.0 and SSL 3.0 |

Related information:

www.sonymobile.com/developer

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